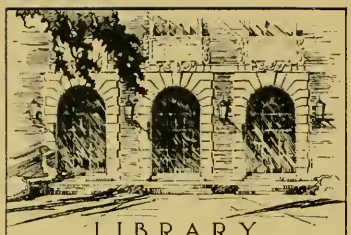

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CHELSEA EMBANKMENT.

OPENED BY THEIR ROYAL HIGHNESSES THE DUKE AND DUCHESS OF EDINBURGH, 9TH MAY, 1874.

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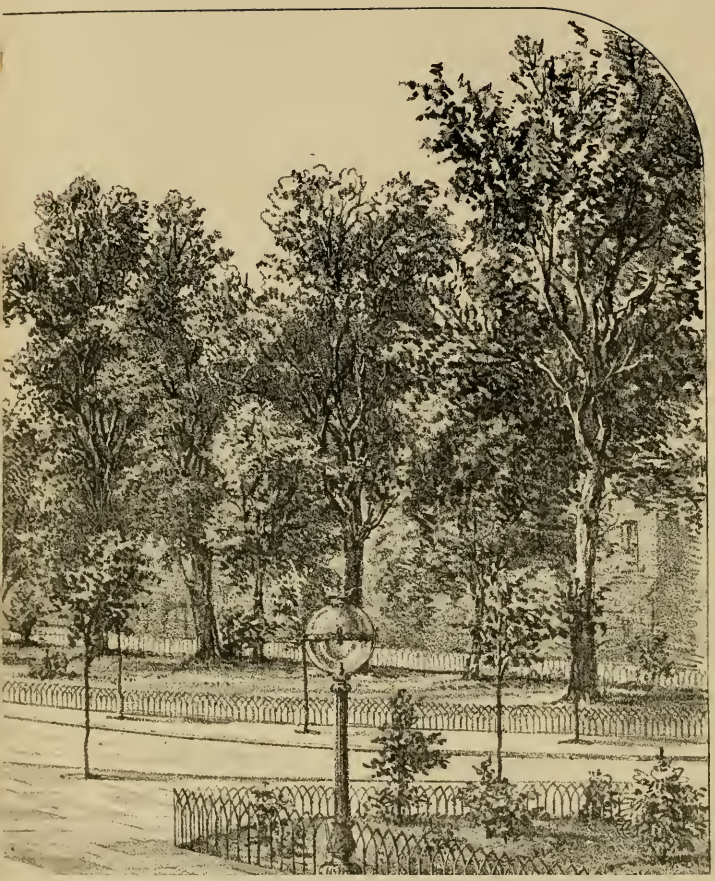


Metropolitan Board of Works.

CHELSEA EMBANKMENT.

OPENED BY

THEIR ROYAL HIGHNESSES

THE

DUKE AND DUCHESS OF EDINBURGH

ON THE 9TH MAY, 1874.

LONDON:
JUDD & CO., PHŒNIX WORKS, DOCTORS' COMMONS, E.C.
(*Printers by Appointment to the Metropolitan Board of Works.*)

Metropolitan Board of Works.

The Chelsea Embankment, to be opened on the 9th May, is the third Embankment of the Thames executed by the Metropolitan Board of Works within the last ten years, comprising together a length of nearly $3\frac{1}{2}$ miles of embankment and public thoroughfare, which has reclaimed 52 acres from the old mud foreshore of the river.

The embankment of the Thames within the Metropolis had been contemplated and been the subject of several Royal and Parliamentary Commissions for a very long period, but the only work of any importance executed before the question was taken in hand by the Metropolitan Board of Works was a length of about a mile, executed by the Commissioners of Her Majesty's Woods and Forests, extending from a point near Vauxhall Bridge to the western extremity of Chelsea Hospital. This embankment, however, had no pretensions to architectural embellishment, and is devoid of many features characteristic of the more recent works.

We are indebted to the exigencies of the Main Drainage works, in the first instance, for the execution of the embankment about to be opened, as well as of the earliest and largest of the three works now known

as the Victoria Embankment. But although primarily both these works were designed for the purpose of finding a site for the Low Level Sewer which traverses their length, and has been executed on the foreshore of the river safely under the protection of their walls, this is by no means the most important service rendered by them. In this way they have contributed to the sanitary improvement of the Metropolis; and not in this way only, as will be at once evident to those who recollect the wide-spread and reeking mud banks which only a few years since formed the foreshore, and were forced upon the attention of more than one of the senses when exposed to the rays of a summer sun. For these unsightly and unpleasant mud banks pleasant drives and ornamental gardens have now been substituted, and it is only on the occasion of an unusually low tide that any of the river foreshore is exposed to view, and even then it is kept comparatively clean by the improved scour of the tide, which being restrained within bounds by the embankment walls, flows with more uniform velocity in an improved channel. In this way the river is not only purified, but rendered more useful as a navigable stream for the purposes of trade.

Passengers by the river steamboats will readily acknowledge a further benefit derived from these embankments. A few years since they were landed from the boats on to a barge, frequently of insufficient dimensions, moored in the river at a considerable distance from the land, and retained in place by a huge structure of timber. Leaving the barge, they had to traverse a long and narrow platform of timber, supported over the river by timber piles, and in some

cases ere they reached a main thoroughfare, had a still further journey through a labyrinth of courts and alleys so intricate as to tax the inventive capacity of a stranger to unravel. But if the way from the boats was perplexing, the access to them was irritating, for it would frequently happen that the passenger lost not only time but temper, when, after threading these intricate passages, he found the boat leaving ere he reached the barge, and had to retrace his steps or wait for the next boat. Now, on the contrary, he is landed upon a commodious stage, and has immediate easy and ample access to a leading thoroughfare.

The most evident, and probably most important, advantage which has been derived from the embankment, is the greater facility provided thereby for locomotion on land. In all cases the ground reclaimed from the river has been largely utilized to form new public thoroughfares, the need of which has been one of the most pressing necessities of the day. The impetus which has been given to locomotion by the railways, and the large increase of business transacted in the Metropolis, have gorged our old thoroughfares with vehicles of all kinds, so that traffic has been impeded to a very serious extent; and this is especially the case with streets leading east and west, or generally parallel to the course of the river.

The formation of a road 100 feet in width along the Victoria Embankment from Blackfriars to Westminster, and the extension of the thoroughfare eastward to the Mansion House by the Metropolitan Board of Works, has tended materially to relieve the Strand, Fleet Street, Ludgate Hill, and Cheapside, but the usefulness of this road will not be fully developed until a

communication is opened between it and Charing Cross, an improvement which will be commenced in the course of the present year by the same Board. From the western end of the Victoria Embankment there is a thoroughfare skirting the River as far as the western end of Chelsea Hospital gardens, where the improvement effected by the Commissioners of Her Majesty's Woods was abruptly stopped for want of funds. Until the new works are opened, the portion of this road west of the suspension bridge is only a *cul de sac*, but it will then form part of a thoroughfare 70 feet in width extending to Battersea Bridge and communicating with Battersea Park, and the Surrey side of the River by means of the Battersea and Albert Bridges. The total length of this riverside thoroughfare, from Blackfriars to Battersea Bridge, is $4\frac{1}{2}$ miles, and its width for the greater part of its length varies from 60 to 100 feet, but in the neighbourhood of Millbank, for a length of about $\frac{1}{4}$ mile, the street is in some places not more than 35 feet in width, and this, too, is the only part of the river between Blackfriars and Battersea Bridges which is not embanked. It is to be hoped that the execution of this part of a work otherwise so complete will not long be delayed: as a step in the right direction, Her Majesty's Commissioners of Works are about to extend the embankment wall of the Houses of Parliament 366 feet to the west of the Victoria Tower. The completion of the embankment is rendered now all the more necessary in consequence of recent inundations from the extraordinary tide of the 20th of March last.

In designing these works, an endeavour has

been made to render them not only useful, but agreeable, by giving some architectural embellishment to the wall and its accessories, laying out the surplus ground as ornamental gardens, and planting trees on either side of the road, in imitation of the Boulevards of Paris, a feature somewhat novel in this country. When the whole length of road is completed from Blackfriars to Battersea, and fringed with buildings worthy of the site, it is probable that it will scarcely be surpassed as an agreeable promenade for both foot and carriage traffic. The ample width of roadway, with its continuous avenue of trees, flanked on one side by the river and on the other by ornamental grounds and handsome buildings, will form a thoroughfare not unworthy of the great capital. The crowds which throng the existing embankments on fine summer Sundays afford a proof that its advantages are fully appreciated by the public.

The Victoria Embankment, the first of these improvements undertaken by the Metropolitan Board of Works, was commenced in February, 1864, and completed in six years; its length is $1\frac{1}{4}$ mile, the land reclaimed from the river (37 acres) being utilised partly for a roadway 100 feet in width, and partly for the formation of ornamental grounds. The existence of this embankment presented the opportunity for the construction of the Metropolitan District Railway, at a moderate cost, and without materially interfering with public or private convenience.

The second embankment was on the Surrey shore, now known as the Albert Embankment. This is 4,300 feet in length; it was originally intended to have extended it 1,000 feet further, to Vauxhall Bridge,

but this portion of the work was abandoned for lack of funds. The land reclaimed from the river in this case afforded a site for the erection of the new buildings of St. Thomas' Hospital, as well as for the formation of a roadway 70 feet in width, and for a promenade for foot passengers between the hospital and the river 20 feet in width. This embankment was commenced in September, 1865, and opened to the public in May, 1868.

The work which is now more particularly under consideration originated in this way. When the Metropolitan Board of Works was engaged in considering the question of the Main Drainage of the western portion of the Metropolis, it was at first proposed, with a view to economy, that the drainage of that district should be discharged into the river above Cremorne, having first undergone some process of deodorization, but the inhabitants of the locality very strongly objected to this plan, and it was eventually determined to carry the whole of the drainage to Barking Creek. Between Cremorne and Chelsea Hospital there was, however, no convenient thoroughfare along which to construct the sewer, and it was at one time contemplated to construct it under the foreshore of the river. As this would have necessitated the formation of a temporary dam, in itself a very costly expedient, it was deemed most desirable that a permanent embankment wall should be constructed, and the sewer formed behind it, instead of behind a temporary timber dam. As a matter of fact the formation of the wall has cost little, if any more, than the temporary work would have done, and by means of it the Board has been enabled not only to construct the

sewer without inconvenience to the public, but to improve the navigable channel of the river, to remove the mud banks, which were in places as much as 4 feet in depth, to reclaim $9\frac{1}{2}$ acres from the river, and to form a new and most useful thoroughfare.

The Metropolitan Board first applied to Parliament for powers to execute this work in 1865, but in consequence of the Money Bill not having been introduced by the Government that Session the Embankment Bill was withdrawn. It was again introduced in the following Session, but without success, and it was not till July, 1868, that an Act was obtained.

The designs were early prepared by Mr. Bazalgette, but, owing to difficulties in raising the money, the work was not commenced until August, 1871.

The embankment wall, which is upwards of $\frac{3}{4}$ mile in length, is formed of concrete and faced with granite, being similar in this respect to the Albert and to the eastern portion of the Victoria Embankment. The granite, instead of being dressed to a smooth face, as in the other embankments, has been simply hammer dressed; and the parapet, which is made of a bolder and less refined contour than in the other embankments, is partly dressed in the same fashion, to harmonize with the general appearance of the wall.

Owing to the more favourable character of the ground, and the nature and extent of the river traffic in this locality, it has not been deemed necessary to carry the foundations of the wall to so great a depth as in the case of the embankments lower down the river; they are consequently carried down only 4 feet below low water spring tides; an arrange-

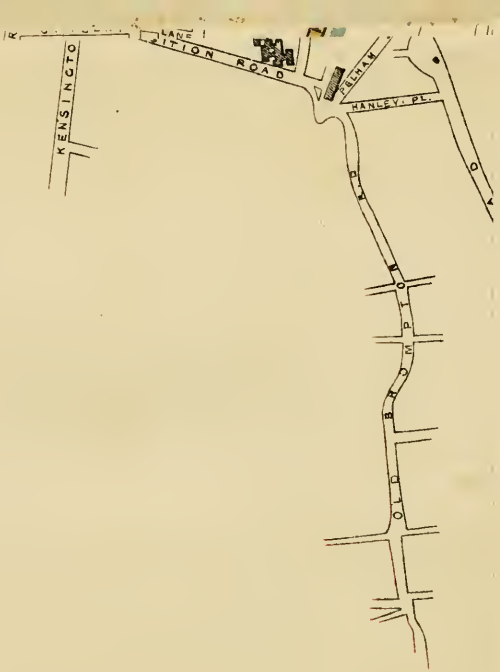
ment which has enabled the work to be executed without the aid of a cofferdam, at a considerably reduced cost. The line of wall has been laid out so as to reduce the river to a nearly uniform width of 700 feet, the width having previously varied from 700 to 850 feet.

The roadway, which is 70 feet in width throughout, and planted on each side with trees, is diverted from the river for a small portion of its length, in order to form a communication with the new Albert Bridge.

A junction with Queen's Road is effected at the east end of Cheyne Walk, and other communications with this thoroughfare will be formed by new streets to be laid out to the east of this junction.

The whole of the works have been executed by Mr. Webster, the contractor, according to the designs and under the superintendence of Mr. J. W. Bazalgette, C.B., the Engineer, and Mr. J. Grant, the Assistant Engineer to the Board.

The cost of the works, including that of the Low Level Sewer, has been about £134,000, exclusive of the expenditure for purchase of property and compensations.


KENSINGTO
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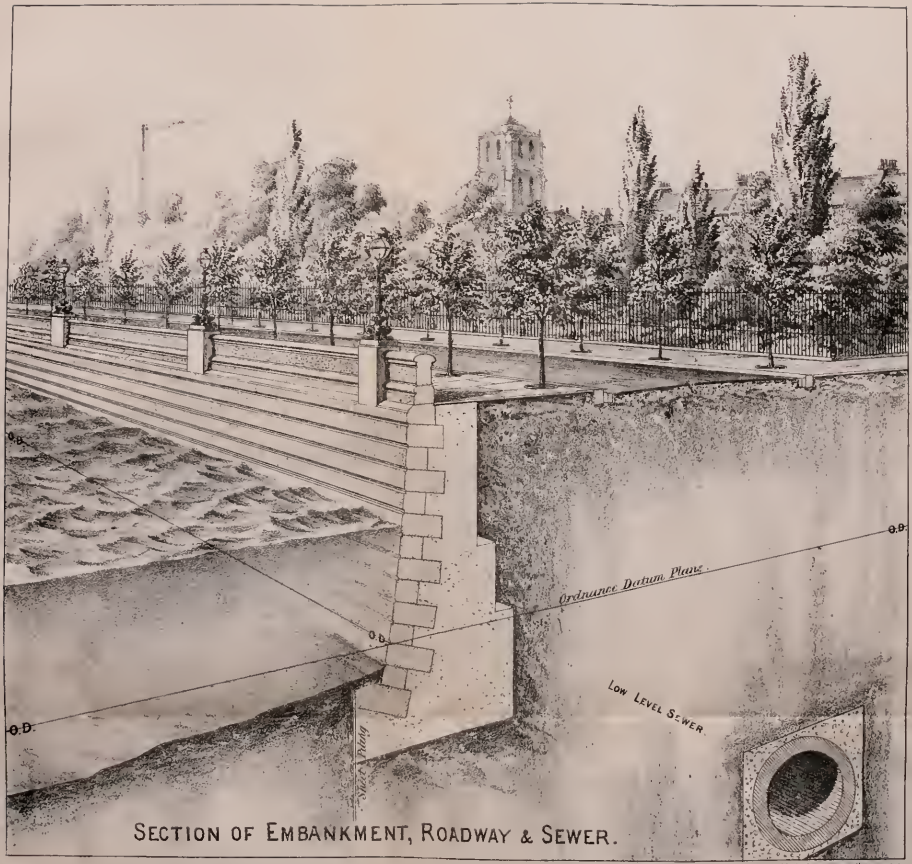
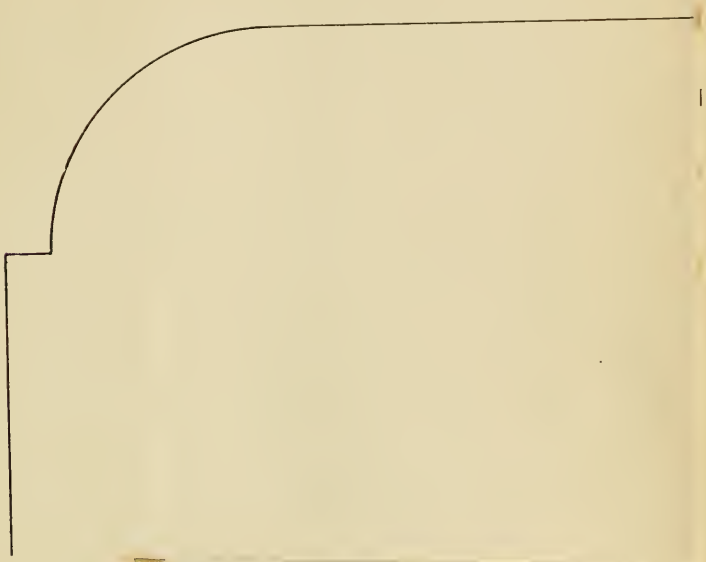
CHELSEA EMBANKMENT.



SECTION OF EMBANKMENT, ROADWAY & SEWER.



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CHELSEA EMBANKMENT

OPENED BY THEIR ROYAL HIGHNESSES THE DUKE AND DUCHESS OF EDINBURGH, 9TH MAY, 1874.

J. W. BAZALGETTE C.B. *ENGINEER*